

=====

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: markspencer

Timestamp: Wed Jul 11 15:40:57 EDT 2007

=====

Application No: 10655873 Version No: 2.0

**Input Set:**

**Output Set:**

**Started:** 2007-07-05 16:54:51.343  
**Finished:** 2007-07-05 16:54:51.775  
**Elapsed:** 0 hr(s) 0 min(s) 0 sec(s) 432 ms  
**Total Warnings:** 6  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 12  
**Actual SeqID Count:** 12

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)

SEQUENCE LISTING

<110> University of South Florida  
Mohapatra, Shyam S.  
Kumar, Mukesh

<120> Genetic Adjuvants for Immunotherapy

<130> USF-182XC1

<140> 10655873

<141> 2003-09-05

<150> 10/655,873

<151> 2003-09-05

<150> 60/319,523

<151> 2002-09-05

<160> 12

<170> PatentIn version 3.3

<210> 1

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> forward primer for murine IL-12 p40 subunit

<400> 1

ccaggcagct agcagcaaag caa

23

<210> 2

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> reverse primer for murine IL-12 p40 subunit

<400> 2

tccctcgagg catcctagga tcggac

26

<210> 3

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> forward primer for plasmid pc40

<400> 3

acccaagctt gcttagcagca aa

22

<210> 4		
<211> 23		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> reverse primer for plasmid pc40		
<400> 4		
gaagccatag agggtaccgc atc	23	
<210> 5		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> forward primer for murine IL-12 p35 subunit		
<400> 5		
tgcggatcca gcatgtgtca at	22	
<210> 6		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> reverse primer for murine IL-12 p35 subunit		
<400> 6		
gcagaggggcc tcgagcttc ag	22	
<210> 7		
<211> 1444		
<212> DNA		
<213> Homo sapiens		
<400> 7		
tttcattttg ggccgagctg gagggcgccgg ggccgtcccg gaacggctgc ggccggggcac	60	
ccccggagtt aatccgaaag cgccgcaagc cccgcggggcc ggccgcaccc cacgtgtcac	120	
cggagaagctg atgttagagag agacacagaa ggagacagaa agcaagagac cagagtcccg	180	
ggaaagtcct gccgcgcctc gggacaatta taaaaatgtg gccccctggg tcagcctccc	240	
agccacccgcc ctacacctgcc gcccccacag gtctgcattcc agccgcctgc cctgtgtccc	300	
tgcagtgccg gctcagcatg tgtccagcgc gcagcctctt ctttgtggct accctggtcc	360	
tcctggacca cctcagtttg gccagaaacc tccccgtggc cactccagac ccaggaatgt	420	

tcccatgcct tcaccactcc caaaacctgc tgagggccgt cagcaacatg ctccagaagg	480
ccagacaaac tctagaattt tacccttgca cttctgaaga gattgatcat gaagatatac	540
caaaagataa aaccagcaca gtggaggcct gtttaccatt ggaattaacc aagaatgaga	600
gttgcctaaa ttccagagag acctcttc taactaatgg gagttgcctg gcctccagaa	660
agacctctt tatgatggcc ctgtgcctta gtatgtatcc tgaagacttg aagatgtacc	720
aggtggagtt caagaccatg aatgcaaagc ttctgatgga tcctaagagg cagatcttc	780
tagatcaaaa catgctggca gttttatgtt agctgatgca ggcctgaat ttcaacagt	840
agactgtgcc aaaaaatcc tcccttgaag aaccggattt ttataaaact aaaatcaagc	900
tctgcatact tcttcatgct ttcagaattt gggcagtgtac tattgataga gtgtatggct	960
atctgaatgc ttccctaaaaa gcgaggtccc tccaaaccgt tgtcattttt ataaaacttt	1020
gaaatgagga aactttgata ggatgtggat taagaacttag ggagggggaa agaaggatgg	1080
gactattaca tccacatgtt acctctgtttt aagtatttt gacatttact gtggataat	1140
tgttttaag ttttcatgaa tgaatttgta agaaggaaa atatccatcc tgaaggtgtt	1200
tttcattcac ttaatagaa gggcaaataat ttataagcta tttctgttacc aaagtgttt	1260
tggaaacaaa catgttaagca taacttattt taaaatattt atttatataa ctggtaatc	1320
atgaaagcat ctgagctaac ttatattttt ttatgttata tttattaaat tatttatcaa	1380
gtgtatgtttaaaaatttt taagtgttct aaaaataaaa gtattgaatt aaagtgaaaa	1440
aaaa	1444

<210> 8  
 <211> 253  
 <212> PRT  
 <213> Homo sapiens

<400> 8

Met Trp Pro Pro Gly Ser Ala Ser Gln Pro Pro Pro Ser Pro Ala Ala			
1	5	10	15

Ala Thr Gly Leu His Pro Ala Ala Arg Pro Val Ser Leu Gln Cys Arg		
20	25	30

Leu Ser Met Cys Pro Ala Arg Ser Leu Leu Leu Val Ala Thr Leu Val		
35	40	45

Leu Leu Asp His Leu Ser Leu Ala Arg Asn Leu Pro Val Ala Thr Pro  
50 55 60

Asp Pro Gly Met Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg  
65 70 75 80

Ala Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr  
85 90 95

Pro Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys  
100 105 110

Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu  
115 120 125

Ser Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys  
130 135 140

Leu Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser  
145 150 155 160

Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn  
165 170 175

Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn  
180 185 190

Met Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser  
195 200 205

Glu Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys  
210 215 220

Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala  
225 230 235 240

Val Thr Ile Asp Arg Val Met Ser Tyr Leu Asn Ala Ser  
245 250

<210> 9  
<211> 2347  
<212> DNA  
<213> Homo sapiens

<400> 9  
ctgtttcagg gccatggac tctccgtcct gcccagagca agatgtgtca ccagcagttg 60  
gtcatctctt ggtttccct ggttttctg gcatctcccc tcgtggccat atggaaactg 120  
aagaaaagatg ttatgtcgt agaattggat tggtatccgg atgcccctgg agaaaatggtg 180  
gtcctcacct gtgacaccccc tgaagaagat ggtatcacct ggaccttggga ccagagcagt 240  
gaggtcttag gctctggcaa aaccctgacc atccaagtca aagagtttg agatgctggc 300  
cagtagcacct gtcacaagg aggcgagggtt ctaagccatt cgctcctgct gcttcacaaa 360  
aaggaagatg gaatttggc cactgatatt ttaaaggacc agaaaagaacc caaaaataag 420  
acctttctaa gatgcgaggc caagaattat tctggacgtt tcacctgctg gtggctgacg 480  
acaatcagta ctgatttgac attcagtgac aaaagcagca gaggcttcc tgaccccaaa 540  
ggggtgacgt gcggagctgc tacactctct gcagagagag tcagagggga caacaaggag 600  
tatgagtaact cagtggagtg ccaggaggac agtgcctgcc cagctgctga ggagagtctg 660  
cccatgtagg tcatggtgg a tggcgttac aagctaagt atgaaaacta caccagcagc 720  
ttcttcatca gggacatcat caaacctgac ccacccaaga acttgcagct gaagccatta 780  
aagaattctc ggcagggtgg a ggtcagctgg gagtaccctg acacctggag tactccacat 840  
tcctacttct ccctgacatt ctgcgttca g gtccaggggca agagcaagag agaaaagaaa 900  
gatagagttct tcacggacaa gacctcagcc acggtcattt gcccaaaaa tgccagcatt 960  
agcgtgcggg cccaggaccg ctactatagc tcatctgg a gcaatgggc atctgtgcc 1020  
tgcagttagg ttctgatcca g gatgaaaat ttggaggaaa agtggaaagat attaagcaaa 1080  
atgtttaaag acacaacgga atagacccaa aaagataatt tctatctgat ttgtttaaa 1140  
acgtttttt aggatcacaa tgatatctt gctgtatgg tatagttaga tgctaaatgc 1200  
tcattgaaac aatcagctaa tttatgtata gatttccag ctctcaagtt gccatgggcc 1260  
ttcatgtcat taaaatattt aagtaattt tgtattttt agtatattac tgttattaa 1320  
cgtttgtctg ccaggatgta tggaatgtt catacttta tgacctgatc catcaggatc 1380  
agtccttatt atgcaaaatg tgaatttaat tttatgttta ctgacaactt ttcaagcaag 1440  
gctgcaagta catcagttt atgacaatca ggaagaatgc agtgttctga taccagtgcc 1500  
atcatacact tttatgtata gatggaaacc catggaaacc tgacaatgca 1560  
aacctgttga gaagatccag gagaacaaga tgctagttcc catgtctgtg aagacttcct 1620  
ggagatggtg ttgataaagc aatttagggc cacttacact tctaaagcaag tttatctt 1680

ggatgcctga	atttaaaag	ggctagaaaa	aatgattga	ccagcctggg	aaacataaca	1740
agaccccgtc	tctacaaaaa	aaattaaaaa	ttagccaggc	gtggtggctc	atgcttgtgg	1800
tcccagctgt	tcaggaggat	gaggcaggag	gatctcttga	gccaggagg	tcaaggctat	1860
ggtgagccgt	gattgtgcca	ctgcatacca	gcctaggtga	cagaatgaga	ccctgtctca	1920
aaaaaaaaaa	tgattgaaat	taaaattcag	cttagcttc	catggcagtc	ctcacccca	1980
cctctctaaa	agacacagga	ggatgacaca	gaaacaccgt	aagtgtctgg	aaggcaaaaa	2040
gatctaaga	ttcaagagag	aggacaagta	gttatggcta	aggacatgaa	attgtcagaa	2100
tggcaggtgg	cttcttaaca	gccctgtgag	aagcagacag	atgcaaagaa	aatctggaat	2160
ccctttctca	ttagcatgaa	tgaacctgat	acacaattat	gaccagaaaa	tatggctcca	2220
tgaagggtgct	actttaagt	aatgtatgtg	cgctctgtaa	agtgattaca	tttgtttcct	2280
gtttgttat	ttatttattt	attttgcat	tctgaggctg	aactaataaa	aactcttctt	2340
tgtaatc						2347

<210> 10  
 <211> 328  
 <212> PRT  
 <213> Homo sapiens

<400> 10

Met	Cys	His	Gln	Gln	Leu	Val	Ile	Ser	Trp	Phe	Ser	Leu	Val	Phe	Leu
1					5							10			15

Ala	Ser	Pro	Leu	Val	Ala	Ile	Trp	Glu	Leu	Lys	Lys	Asp	Val	Tyr	Val
								20					25		30

Val	Glu	Leu	Asp	Trp	Tyr	Pro	Asp	Ala	Pro	Gly	Glu	Met	Val	Val	Leu
								35				40		45	

Thr	Cys	Asp	Thr	Pro	Glu	Glu	Asp	Gly	Ile	Thr	Trp	Thr	Leu	Asp	Gln
									50			55		60	

Ser	Ser	Glu	Val	Leu	Gly	Ser	Gly	Lys	Thr	Leu	Thr	Ile	Gln	Val	Lys
								65				75		80	

Glu	Phe	Gly	Asp	Ala	Gly	Gln	Tyr	Thr	Cys	His	Lys	Gly	Gly	Glu	Val
								85			90		95		

Leu Ser His Ser Leu Leu Leu His Lys Glu Asp Gly Ile Trp

100                    105                    110  
Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe  
115                    120                    125  
  
Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp  
130                    135                    140  
  
Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg  
145                    150                    155                    160  
  
Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser  
165                    170                    175  
  
Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu  
180                    185                    190  
  
Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile  
195                    200                    205  
  
Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr  
210                    215                    220  
  
Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn  
225                    230                    235                    240  
  
Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp  
245                    250                    255  
  
Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr  
260                    265                    270  
  
Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg  
275                    280                    285  
  
Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala  
290                    295                    300  
  
Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser  
305                    310                    315                    320  
  
Glu Trp Ala Ser Val Pro Cys Ser  
325

<210> 11  
 <211> 1240  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 cacattgttc tgcatcatctg aagatcagct attagaagag aaagatcagt taagtcctt 60  
 ggacctgatc agcttgatac aagaactact gattcaact tctttggctt aattctctcg 120  
 gaaacgatga aatatacaag ttatatcttgc gctttcagc tctgcatacg tttgggtct 180  
 ctggctgtt actgccagga cccatatgtt aaagaagcag aaaaccttaa gaaatatttt 240  
 aatgcaggatc attcagatgt agcggataat ggaactctt tcttaggcat tttgaagaat 300  
 tggaaagagg agagtgcacag aaaaataatg cagagccaaa ttgtctcctt ttacttcaaa 360  
 cttttaaaa actttaaga tgaccagagc atccaaaga gtgtggagac catcaaggaa 420  
 gacatgaatg tcaagttttt caatagcaac aaaaagaaac gagatgactt cgaaaagctg 480  
 actaattatt cggttaactga ctgaaatgtc caacgcaaag caatacatga actcatccaa 540  
 gtgatggctg aactgtcgcc agcagctaaa acagggaaagc gaaaaaggag tcagatgctg 600  
 ttccgaggtc gaagagcatc ccagtaatgg ttgtcctgccc tgcaatattt gaattttaaa 660  
 tctaaatcta tttattaata tttaacatta tttatatggg gaatataattt ttagactcat 720  
 caatcaaata agtatttata atagcaactt ttgtgtaatg aaaaatgaata tctattaata 780  
 tatgtattat ttataattcc tatacctgt gactgtctca cttaatcctt tgttttctga 840  
 ctaatttagc aaggctatgt gattacaagg ctttatctca ggggccaact aggcagccaa 900  
 cctaagcaag atcccatggg ttgtgtgttt atttcacttg atgatacaat gaacacttat 960  
 aagtgaagtg atactatcca gtactgccc gtttggaaat atgcctgcaa tctgagccag 1020  
 tgcttaatg gcatgtcaga cagaacttga atgtgtcagg tgaccctgat gaaaacatag 1080  
 catctcagga gatttcatgc ctgggtcttc caaatattgt tgacaactgt gactgtaccc 1140  
 aatggaaag taactcattt gttaaaatta tcaatatcta atatataatgata ataaagtgta 1200  
 agttcacaac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1240

<210> 12  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 12

Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu  
1 5 10 15

Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu  
20 25 30

Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn  
35 40 45

Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp  
50 55 60

Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe  
65 70 75 80

Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile  
85 90 95

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg  
100 105 110

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val  
115 120 125

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser  
130 135 140

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg  
145 150 155 160

Gly Arg Arg Ala Ser Gln  
165